BIOSERVICE
SCIENTIFIC LABORATORIES GmbH

Acute Dermal Toxicity

(Limit Test)

with

Wacker BS 1701

Report

page 1 of 19

BSL BIOSERVICE Project No.: 001697

Sponsor:

Wacker-Chemie GmbH

Werk Burghausen

Johannes-Hess-Strasse 24

D-84489 Burghausen, Germany

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Copy of the GLP Certificate

BAYERISCHES LANDESAMT
FÜR ARBEITSSCHUTZ,
ARBEITSMEDIZIN UND SICHERHEITSTECHNIK
Pfarrstraße 3 · 80538 München · Telefon (089) 21 84-0

LfAS

GLP - B E S C H E I N I G U N G

Bescheinigung

Hiermit wird bestätigt, daß die Prüfeinrichtung(en)

BSL Bioservice Scientific Laboratories GmbH
in 82152 Planegg (Ort, Anschrift)
Behringstraße 6
der Firma BSL Bioservice Scientific Laboratories GmbH (Firma)
am 29./30. November 1999 (Datum)

von der für die Überwachung zuständigen Behörde über Einhaltung der Grundsätze der Guten Laborpraxis inspiziert worden ist (sind).

Es wird hiermit bestätigt, daß folgende Prüfungen in dieser Prüfeinrichtung nach den Grundsätzen der Guten Laborpraxis durchgeführt werden.

Certificate

It is hereby certified that the test facility(ies)

BSL Bioservice Scientific Laboratories GmbH
in 82152 Planegg (location, address)
Behringstraße 6
of Firma BSL Bioservice Scientific Laboratories GmbH (company name)
on 29./30. November 1999 (date)

was (were) inspected by the competent authority regarding compliance with the Principles of Good Laboratory Practice.

It is hereby certified that studies in this test facility are conducted in compliance with the Principles of Good Laboratory Practice.

Die Prüfungen von Stoffen und Zubereitungen betreffen folgende OECD-Prüfkategorie

Prüfkategorie 2: Prüfungen auf toxikologische Eigenschaften

Prüfkategorie 3: Prüfungen auf mutagene Eigenschaften (in vitro, in vivo)

Prüfkategorie 9: Sonstige Prüfungen; a) Mikrobiologische Sicherheitsprüfungen
b) Wirksamkeitsprüfungen an Zellkulturen

München, 04.08.2000
I.V.

Ritter
Leitender Gewerbedirektor

L.S.

Contents

Preface

General

Sponsor:	Wacker-Chemie GmbH Werk Burghausen Johannes-Hess-Strasse 24 D-84489 Burghausen, Germany
Monitor:	Dr. Axel Bosch
Testing Facility:	BSL BIOSERVICE Scientific Laboratories GmbH Behringstraße 6 D-82152 Planegg/München
BSL BIOSERVICE-Project No.:	001697
Test Item:	WACKER BS 1701
Title:	Acute Dermal Toxicity (Limit Test) with WACKER BS 1701

Project Staff

Study Director:	Dr. Achim Albrecht
Deputy Director of the Testing Facility:	Dr. Angela Lutterbach
Quality Assurance Unit:	Dr. Margarete Hoechst Dipl. Biol. Maike Führböter

Schedule

Date of Project Protocol:	27.10.2000
Arrival of Test Item:	26.10.2000
Start of Study:	06.11.2000
End of Study:	23.11.2000
Date of Draft Report:	13.12.2000
Date of Report:	25.01.2001

Project Staff Signatures

Study Director: Dr. Achim Albrecht

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Date: 25.01.2021

Deputy Director of the
Testing Facility: Dr. Angela Lutterbach

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Date: 25.01.2021

Quality Assurance

This study was conducted to comply with:

Chemikaliengesetz („Chemicals Act") of the Federal Republic of Germany, Anlage 1 („Annex 1"), dated August 01, 1994 (BGBL. I, 1994, p. 1703).

OECD Principles of Good Laboratory Practice (as revised in 1997); OECD Environmental Health and Safety Publications; Series on Principles of Good Laboratory Practice and Compliance Monitoring - Number 1.

Environment Directorate, Organisation for Economic Co-operation and Development, Paris 1998.

This study was assessed in compliance with the project protocol, the study plan and the Standard Operation Procedures of BSL BIOSERVICE. The study and/or the testing facility were periodically inspected by the Quality Assurance Unit and the dates and phases of the inspections and audits are included in this report. These inspections and audits were carried out by the Quality Assurance Unit, personnel independent of staff involved in the study. The final report of the study was audited. A Quality Assurance Statement, signed by the Quality Assurance, is included in this report.

Guidelines

This study followed the procedures indicated by the following internationally accepted guidelines and recommendations:

First Addendum to OECD Guidelines for Testing of Chemicals, Section 4, No. 402,"Acute Dermal Toxicity" adopted February 24, 1987.

Directive 92/69 EEC B.3.

Archiving

The following records will be stored in the scientific archives of BSL BIOSERVICE Scientific Laboratories GmbH according to the GLP-Regulations:

A copy of the final report, the project protocol, the study plan and a documentation of all raw data generated during the conduct of the study (documentation forms as well as any other notes of raw data, printouts of instruments and computers) and the correspondance with the sponsor concerning the project.

If test item is left over a sample will be stored according to the period fixed by GLP-Regulations. Samples that are unstable may be disposed off before that time. No raw data or material relating to the study will be discarded without the sponsor's prior consent. Unless otherwise agreed upon, remaining test item will be discarded three months after release of the report.

Statement of Compliance

BSL BIOSERVICE-Project-No.: 001697

Test Item: Wacker BS 1701

Study Director: Dr. Achim Albrecht

Title: Acute Dermal Toxicity (Limit Test) with Wacker BS 1701

This study performed in the testing facilities of BSL BIOSERVICE Scientific Laboratories GmbH was conducted in compliance with Good Laboratory Practice Regulations:

Chemikaliengesetz ("Chemicals Act") of the Federal Republic of Germany, Anlage 1 ("Annex 1"), dated August 01, 1994 (BGBL. I, 1994, p. 1703).

"OECD Principles of Good Laboratory Practice (as revised in 1997)", Paris 1998.

There were no circumstances that may have affected the quality or integrity of the study.

Study Director: Dr. Achim Albrecht

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Date: 26.02.2001

Quality Assurance

BSL BIOSERVICE
Scientific Laboratories GmbH
Behringstr. 6, D-82152 Planegg

Statement

BSL BIOSERVICE-Project-No.:	001697
Test Item:	Wacker BS 1701
Study Director:	Dr. Achim Albrecht
Title:	Acute Dermal Toxicity (Limit Test) with Wacker BS 1701

This report was audited by the Quality Assurance Unit and the conduct of this study was inspected on the following dates:

	Phases and Dates of QAU Inspections	Dates of Reports to the Study Director and Management
Audit Project Protocol/ Study Plan:	06.11.00	06.11.00
Experimental Phase Audit (Method Audit):	02.08.00	02.08.00
Audit Draft Report:	28.12.00	28.12.00
Report Audit:	31.01.01	31.01.01

This report reflects the raw data.

Quality Assurance Unit

Dr. Margarete Hoechst (or)
Dipl. Biol. Maike Führböter

Margarete Hoechst
.....

Date: 26.02.01

Summary

One group of 5 male and 5 female rats were treated for a 24-hour exposure period in a single dose (2000 mg/kg BW) by applying the test item uniformly over an area which was approx. 10% of the total body surface.

Test item was held in contact with the skin with a gauze-dressing and non-irritating tape and was fixed with an additional dressing in a suitable manner.

At the end of the exposure, residual test item was removed by using water.

A careful clinical examination was made once a day. At the end of the observation period the animals were sacrificed and necropsy was carried out to record gross pathological changes.

No compound related mortalities and no other signs of toxicity were recorded within 14 days p. appl. for the test item.

Therefore, according to OECD guideline 402, a sufficient estimation of the acute toxicity of the test item is provided.

Conclusions

Considering the reported data of this toxicity test it can be stated that the test item has no acute toxic characteristics.

The LD_{50} was determined to be > 2000 mg/kg bw.

Introduction

The test for acute toxicity is performed in the rat. Although several mammalian species may be used, the rat is the preferred rodent species.

The purpose of the acute dermal toxicity is the assessment and evaluation of the characteristics of chemicals by using the dermal route. The acute dermal toxicity method is useful where exposure by the dermal route is likely.

This study provides information on health hazards likely to arise from a short term exposure by the dermal route.

The following study is performed as Limit Test oriented to OECD 402.

This method describes a single dose test, allowing sufficient estimation of the acute toxicity if no compound related mortality is produced within the observation period of 14 days.

Materials and Methods

Characterisation of the Test Item

The test item and the information concerning the test item were provided by the sponsor.

Name:	Wacker BS 1701
Chemical Description:	Alkylalkoxysilane
Batch No.:	KH 02343
CAS.-No.:	35435-21-3
Aggregate State at RT:	liquid
Colour:	colourless
Density (g/cm³):	0.86 at 25°C
Purity:	98.53%
Analysis:	GC
Stability:	Pure: years
	Stable in aqueous solution for at least 24 hours
Storage:	at room temperature, protected from light
Expiry Date:	November 2001
Safety precautions	Routine hygienic procedures were sufficient to assure personnel health and safety.

Preparation of the Test Item

The liquid test item was tested as delivered.

Test Animals

Hsd : Wistar rats (Full-Barrier), Sex: male and female, body weight at the commencement of the study 200-300 g. Five animals per sex were used for the test item. The animals were derived from a controlled full barrier maintained breeding system (spf).

Source: Harlan Winkelmann GmbH, D-33178 Borchen.

According to Art. 9.2, No.7 of the German Act on Animal Welfare the animals are bred for experimental purposes.

Animal Husbandry

The animals were barrier maintained (semi-barrier) in air conditioned rooms

- Temperature: 22 ± 3° C
- Rel. humidity: 55 ± 10%
- Artificial light, lighting regime 12 : 12 hours, light 6.00 - 18.00
- Air change: at least 10 x / hour
- Feeding ad libitum, Altromin 1324 maintenance diet for rats and mice, totally-pathogen-free (TPF)
- Free access to tap water (drinking water, municipal residue control, microbiol. controlled periodically)
- The animals were individually kept in Macrolon cages on Altromin saw fiber bedding
- Adequate acclimatization period

Other Materials

Gauze patches, VM 17 DIN 61630 cotton, 5 x 5 cm,

Fuhrmann Verbandstoffe

Blenderm™, hypoallergenic surgical tape, # 1525-2,

3 M Health Care

Acrylastic®, hypoallergenic elastic bandage, Beiersdorf AG

Preparation of the Animals

The animals were marked for individual identification.

Approximately 24 hours before the test, fur was removed from the dorsal area of the trunk by clipping. A health inspection was performed to ensure the good state of health of the animals.

Not less than 10% of the body surface were cleared for the application.

Prior to the first application a detailed clinical observation was made in all animals.

Application

Test Group:

5 male and 5 female rats were treated with the test item.

Dose:

The test was carried out as a limit test according to OECD 402.

Volume of application: The test item (2000 mg/kg BW) was applied with a syringe uniformly over an area which was approx. 10% of the total body surface.

Application Procedure:

Test item was held in contact with the skin of the dorsal area with a semi-occlusive gauze-dressing and non-irritating tape and fixed with an additional dressing which was wrapped around the abdomen.

After a 24-hour exposure period the test item was removed by using water.

Weight Assessment

The animals were weighed prior to application, on day 7 and at the end of the two week observation period.

Assessment of Toxicity

A careful clinical examination was made several times on the day of application and once a day thereafter.

Cageside observations included changes in the skin and fur, eyes and mucous membranes. Also respiratory, circulatory, autonomic and central nervous systems and somatomotor activity and behaviour pattern was examined. Particular attention was directed to observations of tremor, convulsions, salivation, diarrhoea, lethargy, sleep and coma.

Pathology

At the end of the observation period surviving animals were sacrified by an overdosage of pentobarbital.

All animals were subjected to gross necropsy and examined macroscopically. All gross pathological changes and all abnormalities were recorded.

Necropsies were performed by experienced prosectors

Deviation to Project Protocol

There were no unplanned changes to the project protocol.

Results

None of the animals of the test group showed reactions identified as compound related toxicity. All animals survived throughout the test period showing normal food intake. Weight gain of the male animals was within the expected range. The female animals lost weight (table 3) within the first week after application, but had a normal weight gain during the second week. This is probably due to the stress of manipulation procedure, which means a big physical strain for the animals. This is more visible for the female animals, because they have already reached their adult weights at the beginning of the study.

During the observation period of 14 days no compound-related mortality was produced. Therefore according to OECD 402 a sufficient estimation of the acute toxicity of the test item is provided.

At necropsy there was no evidence of gross pathology of organs (table 1 and table 2).

table 1:

Animal No.	Sex	Date of necropsy	Results
1		21.11.00 / day 15 of treatment	No findings noted
2		21.11.00 / day 15 of treatment	No findings noted
3		21.11.00 / day 15 of treatment	No findings noted
4		21.11.00 / day 15 of treatment	No findings noted
5		21.11.00 / day 15 of treatment	No findings noted

table 1:

Animal No.	Sex	Date of necropsy	Results
1		23.11.00 / day 15 of treatment	No findings noted
2		23.11.00 / day 15 of treatment	No findings noted
3		23.11.00 / day 15 of treatment	No findings noted
4		23.11.00 / day 15 of treatment	No findings noted
5		23.11.00 / day 15 of treatment	No findings noted

Considering the reported data of this toxicity test it can be stated that the test item has no acute toxic characteristics.

The LD_{50} was determined to be > 2000 mg/kg bw.

For individual data of weight gain and clinical observation see the table 3 and table 4.

table 3

Weight Gain

Test Item	Animal No/ Sex	Weight			Clinical Observation
		Day 0	Day 7	Day 14	
Wacker BS 1701	male 1	220	237	284	n.s.
Wacker BS 1701	male 2	235	250	284	n.s.
Wacker BS 1701	male 3	240	252	282	n.s.
Wacker BS 1701	male 4	235	258	303	n.s.
Wacker BS 1701	male 5	225	240	289	n.s.
Wacker BS 1701	female 1	218	209	226	n.s.
Wacker BS 1701	female 2	215	220	227	n.s.
Wacker BS 1701	female 3	215	202	228	n.s.
Wacker BS 1701	female 4	210	201	228	n.s.
Wacker BS 1701	female 5	210	204	226	n.s.

n.s. = no significant findings

table 4:
Clinical Observation

Test Item	Animal No/ Sex	Days after treatment	total
		0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	
Wacker BS 1701	male 1	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	male 2	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	male 3	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	male 4	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	male 5	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	female 1	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	female 2	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	female 3	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	female 4	- - - - - - - - - - - - - - - -	n.c.s.
Wacker BS 1701	female 5	- - - - - - - - - - - - - - - -	n.c.s.

n.c.s. = no clinical signs

Distribution of the Report

Sponsor	2x (1 original, 1 copy)
Study Director	1x (copy)

References

OECD Guidelines for Testing of Chemicals
Section 4: Health Effects
Acute Dermal Toxicity, (1987)
Organisation for Economic Co-Operation and Development, Paris